



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,824	11/20/2003	Martin E. Banton	A2454-US-NP	8574

37211 7590 10/18/2007
BASCH & NICKERSON LLP
1777 PENFIELD ROAD
PENFIELD, NY 14526

EXAMINER

WOLDEMARIAM, AKILILU K

ART UNIT	PAPER NUMBER
----------	--------------

2624

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

10/18/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

dneels@bnpatentlaw.com
dmasters@bnpatentlaw.com
mnickerson@bnpatentlaw.com

Office Action Summary

Application No.

10/717,824

Applicant(s)

BANTON, MARTIN E.

Examiner

Aklilu k. Woldemariam

Art Unit

2609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on August 06, 2007 has been entered. Claim 1 has been amended. Claims 2-6 have been cancelled. Claim 1 is still pending, with claim 1 being an independent.

Specification

2. The abstract of the disclosure is objected to because the abstract must be in the range 50 to 150 words. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. **Claim 1** is rejected under 35 U.S.C. 101 because the claimed invention is not supported by either an asserted utility or a well-established utility. The claimed invention is not disclosed a device or a processor to implement the mathematical algorithm. No Physical transformation is present to establish a practical application of the abstract idea. The result (designing two separable filters that approximates the circularly symmetric frequency response) is useful (establishes the specific, substantial, and credible utility designing filters) only if at least made available for use in the disclosed practical application, concrete it the designing two separable filters is based on objective criteria, and tangible if it is more than just a thought or computation within a digital processor, instead being a real world result. In this instance, claim 1 does not

appear to produce a tangible result such that the usefulness of the designing two separable filters can be realized. It, therefore, appears to be non-statutory.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. **Claim 1** is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure, which is not enabling. A device or a processor is critical or essential to the practice of the invention, but not included in the claim is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Since the claimed invention is not disclosed the device or a processor to make the invention, one skilled in the art clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al., hereinafter, Williams (U.S. Patent Number 5, 751, 862 A) in view of Wilkinson, thereafter, Wilkinson (U.S. Patent number 6, 018, 596 A) in view of Mendonca (01/1987, Vol.CAS-34, No.1, Pages 1-10) and further in view of Curry et al., "Curry" (U.S. Patent number 6,983, 076 B2).

Regarding claim 1, William discloses a method for designing filters that approximates the circularly symmetric frequency response achievable using a non-separable filter (see item 304, fig.4) comprising (a) designing therefrom a one-dimensional separable low pass filter (LP), LP being a row vector having entries $[X_{-n}, X_{-(n-1)} \dots X_0 \dots X_{n-1}, X_n]$ (see fig.3 and item 32, fig.11 and column 22, lines 31-35); (b) obtaining a two-dimensional filter LPP by performing the operation: $LP^* \times LP$, LP^* being a column vector having the same entries as LP, LPP having dimensions given by: $\{2n+1, 2n+1\}$ (see column 22, lines 35-38); (d) designing a one-dimensional separable high pass filter (HP), HP being a row vector being entries $[Y_{-m}, Y_{-(m-1)} \dots Y_0 \dots Y_{m-1}, Y_m]$ (see fig.3 and item 31, fig.11 and column 22, lines 31-35); (e) obtaining a two-dimensional filter HPP by performing the operation: $HP^* \times HP$, HP^* being a column vector having the same entries as HP, HPP having dimensions: $\{2m+1, 2m+1\}$ (see column 22, lines 35-38).

William does not disclose (a) selecting a cut-off frequency (c) generating a two-dimensional contour plot for the two-dimensional filter LPP; (f) generating a two-dimensional contour plot for the two-dimensional filter; (g) generating a two-dimensional filter, (ONE) when the two-dimensional contour plot for the two-dimensional separable filter LPP overlaps the two-dimensional contour plot for the two-dimensional separable filter HPP, ONE having the same dimensions of HPP with the only non-zero entry of value 1 being located at the center of ONE; (h) subtracting HPP from ONE to create matrix HPP_{inv} ; and convolving LPP with HPP_{inv} to obtain DSCRN having dimensions: $\{2m+2n+1, 2m+2n+1\}$ and

(i) generating a two-dimensional contour plot for DSCRN; constructing a filter to eliminate moire in a rendered image when two-dimensional contour plot for DSCRN is an approximation to a desired circular symmetry is achieved, the filter being constructed of LLP and HHP.

However, Wilkinson discloses **(a) selecting a cut-off frequency** (see fig.7 and column 4, lines 41-44) and **(i) convolving LPP with HPPinv to obtain DSCRN having dimensions: $\{2m+2n+1, 2m+2n+1\}$** (see fig.3).

It would have been obvious to someone of the ordinary skill in the art the time when the invention was made to use Wilkinson's selecting a cut-off frequency in to William's a method designing filters because it will allow to divide an input image into a number of component images each representing a part of the spatial frequency spectrum of the original image, [Wilkinson's, see column 1, lines 17-20].

William and Wilkinson do not disclose **(c) generating a two-dimensional contour plot for the two-dimensional filter LPP; (f) generating a two-dimensional contour plot for the two-dimensional filter; (g) generating a two-dimensional filter, (ONE) when the two-dimensional contour plot for the two-dimensional separable filter LPP overlaps the two-dimensional contour plot for the two-dimensional separable filter HPP, ONE having the same dimensions of HPP with the only non-zero entry of value 1 being located at the center of ONE; (h) subtracting HPP from ONE to create matrix HPPinv; (i) generating a two-dimensional contour plot for DSCRN; constructing a filter to eliminate moire in a rendered image when two-dimensional contour plot for DSCRN is an**

approximation to a desired circular symmetry is achieved, the filter being constructed of LLP and HHP.

However, Mendonca discloses **(c) generating a two-dimensional contour plot for the two-dimensional filter LPP** (see page 3, item b, fig.1); **(f) generating a two-dimensional contour plot for the two-dimensional filter** (see page 5, item b, fig.4); **(g) generating a two-dimensional filter, (ONE) when the two-dimensional contour plot for the two-dimensional separable filter LPP overlaps the two-dimensional contour plot for the two-dimensional separable filter HPP, ONE having the same dimensions of HPP with the only non-zero entry of value 1 being located at the center of ONE** (see page 3, item b, fig.1 and page 5, item b, fig.4) and **(i) generating a two-dimensional contour plot for DSCRN** (see page 3, item b, fig.1 and page 5, item b, fig.4) and **subtracting HPP from ONE to create matrix HPPinv** (see fig.2e).

It would have been obvious to someone of the ordinary skill in the art the time when the invention was made to use Mendonca's two-dimensional contour plot in the combined method of William and Wilkinson designing filters because it allow to achieve high computational efficiency or low hardware cost, [Mendonca's, see page 1, column 1].

William, Wilkinson and Mendonca do not disclose **(i) constructing a filter to eliminate moire in a rendered image when two-dimensional contour plot for DSCRN is an approximation to a desired circular symmetry is achieved, the filter being constructed of LLP and HHP.**

However, Curry discloses **constructing a filter to eliminate moiré in a rendered image when two-dimensional contour plot for DSCRN is an approximation to a desired circular symmetry is achieved, the filter being constructed of LLP and HHP** (see column 2, lines 18-26).

It would have been obvious to someone of the ordinary skill in the art the time when the invention was made to use Curry's eliminate moiré in a rendered image in the combined method of William, Wilkinson and Mendonca designing filters because it will allow to reduce moiré pattern [Curry's, see column 2, lines 18-21].

Response to Arguments

9. Applicant's arguments filed August 06, 2007 have been respectfully considered, but they are not persuasive. **Regarding 35 U.S.C 101 rejection of claim 1**, the applicant's argued that constructing a filter is useful and provides a tangible result. The examiner disagrees because the examiner cannot see how the mathematical algorithm would produce useful and tangible result with out a device or a processor.

Regarding 35 U.S.C 112 First Paragraph rejection of claim 1, the applicant's argued that constructing a filter is useful and provides a tangible result. The examiner disagrees because the examiner cannot see how the mathematical algorithm would produce useful and tangible result with out a device or a processor to use the claim invention.

Regarding 35 U.S.C 103 rejection of claim 1, the applicant's argued that with references (William and Wilkinson) do not disclose the claim invention, The examiner

Art Unit: 2624

disagrees because William discloses (a) **designing therefrom a one-dimensional separable low pass filter (LP)**, LP being a row vector having entries $[X-n, X-(n-1) \dots X_0 \dots X_{n-1}, X_n]$ (see fig.3 and item 32, fig.11 and column 22, lines 31-35); (b) **obtaining a two-dimensional filter LPP by performing the operation: $LP^* \times LP$** , LP^* being a column vector having the same entries as LP, LPP having dimensions given by: $\{2n+1, 2n+1\}$ (see column 22, lines 35-38); (d) **designing a one-dimensional separable high pass filter (HP)**, HP being a row vector being entries $[Y-m, Y-(m-1) \dots Y_0 \dots Y_{m-1}, Y_m]$ (see fig.3 and item 31, fig.11 and column 22, lines 31-35); (e) **obtaining a two-dimensional filter HPP by performing the operation: $HP^* \times HP$** , HP^* is-being a column vector having the same entries as HP, HPP having dimensions: $\{2m+1, 2m+1\}$ (see column 22, lines 35-38) and Wilkinson discloses (a) **selecting a cut-off frequency** (see fig.7 and column 4, lines 41-44) and **convolving LPP with HPP_{inv} to obtain DSCRN having dimensions: $\{2m+2n+1, 2m+2n+1\}$** (see fig.3, convolving referred as to combining LPP and HPP).

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aklilu k. Woldemariam whose telephone number is 571-270-3247. The examiner can normally be reached on Monday-Thursday 6:30 a.m-5:00 p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on 571-272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

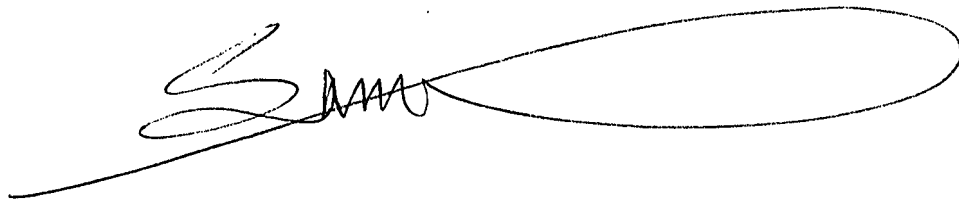
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/717,824
Art Unit: 2624

Page 10

Samir Ahmed
SPE
Art Unit 2624

A.W.
09/20/2007

A handwritten signature in black ink, consisting of a stylized 'S' followed by a series of loops and a large oval at the end.

SAMIR AHMED
PRIMARY EXAMINER